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Columbia River Drainage

STREAMFLOW FORECASTS

STATION NAME or FORECAST POINT	THIS YEAR			PAST RECORD			STATION NAME	THIS YEAR			PAST RECORD		
	FORECAST	THOUSAND ACRE FEET	PERCENT OF AVERAGE	FORECAST	THOUSAND ACRE FEET	PERCENT OF AVERAGE		FORECAST	THOUSAND ACRE FEET	PERCENT OF AVERAGE	FORECAST	THOUSAND ACRE FEET	PERCENT OF AVERAGE
PERIOD	APRIL - SEPTEMBER			APRIL - JULY			APRIL - JUNE			APRIL - SEPTEMBER			
KOOTENAI RIVER below Libby Dam.....	6,250	90	6,221	7,246	5,560	90	5,429	6,178					
FISHER RIVER near Libby.....	145	54		240	135	53		253					
YAAK RIVER near Troy.....	420	78		537	395	77		514					
KOOTENAI RIVER at Leonis (1).....	7,280	82	7,670	8,883	6,340	82	6,771	7,727	5,040	82	5,944	6,150	
INFLOW MOUTON RESERVOIR nr BUTTE (Million Gallons).....	35.0	69	29.6	50.7	29.0	70	23.5	41.2					
WARM SPRINGS CREEK at HEYERS DAM near Anaconda (2).....	12.6	68	24.8	18.5	10.3	67	20.3	15.4					
FLINT CREEK near Southern Cross (3).....	51.5	66		77.6	40.0	65		61.3					
INFLOW LOWER WILLOW CREEK RESERVOIR near Hall (5).....	10.1	60	13.0	16.9	9.5	59	12.2	16.0					
MIDDLE FORK ROCK CREEK near Philipsburg.....	51.5	65		78.8	46.0	65		71.1					
NEVADA CREEK nr Finn.....	11.9	50		23.6	11.0	50		21.8					
BLACKFOOT RIVER near Bonner.....	690	68		1,017	610	66		920	520	65		794	
CLARK FORK RIVER above Milltown (6).....	585	69		843	510	70		730	430	70		613	
CLARK FORK RIVER above Missoula.....	1,275	69	1,929	1,859	1,120	68	1,730	1,651	950	67	1,474	1,408	
WEST FORK BITTERROOT RIVER near Conner (7).....	110	59		187	100	58		172					
BITTERROOT RIVER near Darby.....	365	61		602	335	61		552	295	61		480	
SKALKAHO CREEK near Hamilton.....	39.8	69		57.4	34.5	69		49.8					
BURNT FORK CREEK near Stevensville.....	26.8	69		38.8	23.5	70		33.6					
BITTERROOT RIVER at Missoula (9).....	970	63		1,543	885	62		1,416	760	63		1,211	
CLARK FORK RIVER below Missoula.....	2,245	66		3,405	2,005	65		3,069	1,710	65		2,618	
CLARK FORK RIVER at St. Regis.....	2,970	66	4,348	4,521	2,670	65	3,938	4,078	2,270	65	3,418	3,492	
NORTH FORK FLATHEAD RIVER near Columbia Falls.....	1,600	81		1,969	1,450	81		1,782	1,220	81		1,498	
MIDDLE FORK FLATHEAD RIVER near West Glacier.....	1,520	80	1,747	1,911	1,420	81	1,576	1,750	1,200	82	1,412	1,470	
SOUTH FORK FLATHEAD RIVER near Columbia Falls.....	1,760	76	1,946	2,302	1,630	75	1,808	2,159	1,420	75	1,652	1,884	
FLATHEAD RIVER at Columbia Falls (10).....	5,000	79	5,391	6,330	4,650	80	4,903	5,827	4,000	81	4,443	4,064	
SWAN RIVER near Big Fork.....	510	75		681	450	76		596					
FLATHEAD RIVER near Polson (11).....	5,760	78	6,382	7,394	5,350	79	5,787	6,806	4,650	80	5,159	5,779	
CLARK FORK RIVER near Plains (11).....	8,930	72	11,550	12,340	8,120	72	10,462	11,222	6,850	72	9,163	9,507	
THOMPSON RIVER near Thompson Falls.....	182	69		263	160	68		234					
PROSPECT CREEK at Thompson Falls.....	90.0	63		143	85.0	64		133					
CLARK FORK RIVER at Whitehorse Rapids.....	9,740	71		13,781	8,850	71		12,519	7,500	71		10,633	

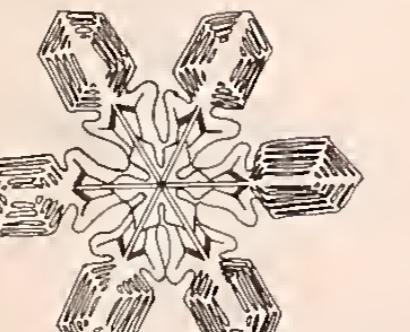
- 1 Adjusted for storage in Lake Koocanusa
- 2 Adjusted for storage in Silver Lake diversions and pumping from Georgetown Lake
- 3 Adjusted for storage in Georgetown Lake diversions from and pumping into Silver Lake
- 4 Sum Flow Clark of Maxville and Boulder Creek plus Maxville
- 5 Sum of North Fork Lower Willow Creek near Hall and South Fork Lower Willow Creek near Hall
- 6 Discharge is observed flow Clark Fork above Missoula and Blackfoot near Bonner
- 7 Adjusted for storage in Painted Rocks Reservoir
- 8 Adjusted for diversion into Sunter Highline Canal
- 9 Discharge is observed flow Clark Fork above and below Missoula
- 10 Adjusted for storage in Hungry Horse Reservoir
- 11 Adjusted for storage in Hungry Horse Reservoir and Flathead Lake
- 12 Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Nakon Rapids Reservoir

ALL FORECASTS PREPARED IN COOPERATION
WITH THE NATIONAL WEATHER SERVICE

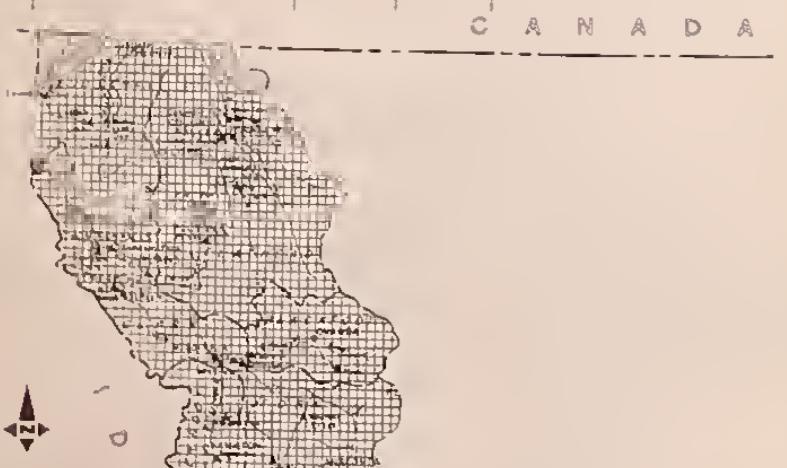
WATER SUPPLY OUTLOOK	
Expressed as "Poor, Fair, Average, Good, Excellent" with Respect to Usable Supply	
STREAM & AREA	Flow Period
Spring Season	late Season
Tobacco	Fair
Little Bitterroot ..	Fair
Hission Valley	Fair
Flint Creek	Fair
Upper Clark Fork	Fair
Nevada Creek	Fair
Blackfoot	Fair
West-side Bitterroot	Fair
East-side Bitterroot	Fair
Bitterroot River	Fair
Lower Clark Fork	Fair



Snow surveyors in Montana found a shallow snowpack at almost all snow courses surveyed this month.



MOUNTAIN SNOWPACK



LEGEND



COLUMBIA RIVER DRAINAGE MONTANA

MOUNTAIN SNOW WATER EQUIVALENT

SNOW SURVEY DATA

February 1, 1981

DRAINAGE BASIN AND SNOW COURSE

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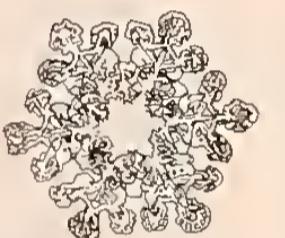
NAME Elevation Date of

Missouri River & Hudson Bay Drainages

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD		THIS YEAR		PAST RECORD	
	FORECAST	PERCENT OF AVERAGE	THOUSAND ACRE FEET	CASTLES	FORECAST	THOUSAND ACRE FEET	LAST YEAR	PERCENT OF AVERAGE
PERIOD								
APRIL - SEPTEMBER								
APRIL - JULY								
RED ROCK RIVER near Monida (1).....	82.0	75	113	110	76.0	74	102	103
BEAVERHEAD RIVER near Grant (2).....	95.0	56	193	171	86.0	58	162	148
BEAVERHEAD RIVER at Barreys (2).....	143	63		226	120	61		196
RUBY RIVER near Alder.....	72.0	69		105	60.0	67		89.0
BIG HOLE RIVER near McRose.....	480	61		792	450	62		730
BOULDER RIVER near Boulder.....	63.0	61	145	103	60.0	62	132	96.7
WILLOW CREEK near Harrison.....	10.0	46		21.5	9.0	47		19.2
MADISON RIVER near Grayling (3).....	360	69	432	523	280	68	328	409
MADISON RIVER near McAllister (4).....	615	69	751	892	490	69	646	706
CALLATIN RIVER near Galatin Gateway.....	350	61		572	300	61		488
INFLOW MIDDLE CREEK RESERVOIR near Bozeman (5).....	16.4	54		30.3	14.0	53		26.2
HYALITE CREEK near Bozeman (6).....	26.8	57		47.4	23.0	56		41.0
GALLATIN RIVER at Logan.....	260	40		649	220	39		557
NISSOUI RIVER at Toston (7).....	1,430	54	2,743	2,671	1,230	53	2,377	2,330
SHEEP CREEK near White Sulphur Springs.....	14.0	61		22.8	12.0	61		19.8
SUN RIVER at Gibson Dam (8).....	385	66	520	580	350	66	473	529
BELT CREEK near Monarch.....	78.0	53		146	70.0	52		134
MISSOURI RIVER at Fort Benton (9).....	2,020	49		4,148	1,750	48		3,640
TWO MEDICINE CREEK near Browning (10).....	175	68		259	165	68		244
BADGER CREEK near Browning.....	92.0	69		133	81.0	70		116
MARIAS RIVER near Shelby.....	346	60	481	577	320	60	444	532
MISSOURI RIVER at Virgelle (11).....	2,343	49		4,793	2,030	48		4,238
MISSOURI RIVER near Lundusky (11).....	2,557	49		5,214	2,200	48		4,586
NORTH FORK MUSSLESHELL RIVER near Delpine.....	3.5	55		6.4	2.9	53		5.5
SOUTH FORK MUSSLESHELL RIVER near Martinsdale.....	31.5	51		61.5	30.0	52		57.6
MISSOURI RIVER below Fort Peck Dam (11).....	2,383	48		4,929	2,050	47		4,381
MILK RIVER at Eastern Crossing.....	261	94		278*				
INFLOW LAKE SAKAKAWEA, ND (11).....	7,400	55		13,450	6,700	55		12,239
SASKATCHEWAN RIVER BASIN								
SWIFTCURRENT CREEK at Sherburne (12).....	108	82	116	132	93.0	81	98.5	115
ST. MARY'S RIVER near Babb (12).....	412	83		498	350	82		426

*For the period March - September



STREAMFLOW FORECASTS

- 1 Adjusted for storage in Lima Reservoir.
- 2 Adjusted for storage in Lima & Clark Canyon Reservoirs.
- 3 Adjusted for storage in Hebgen Lake.
- 4 Adjusted for storage in Hebgen Lake & Ennis Lake.
- 5 Sun, West Fork Hyalite Creek & East Fork Hyalite Creek above the reservoir.
- 6 Adjusted for storage in Middle Creek Reservoir.
- 7 Adjusted for storage in Lima, Hebgen, Ennis, & Clark Canyon Reservoirs.
- 8 Adjusted for storage in Gibson Reservoir & diversions.
- 9 Adjusted for storage in Lima, Clark Canyon, Hebgen, Ennis, Gibson, Plank, Willow Creek, & Canyon Ferry.
- 10 Adjusted for storage in Two Medicine Reservoir & diversions in Two Medicine Canal.
- 11 Adjusted for all upstream reservoirs.
- 12 Adjusted for storage in Lake Sherburne.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE



MOUNTAIN SNOWPACK

Nearly all snow courses in the Gallatin River drainage have minimum snow water content of record. In other drainages, close to one-half of the courses are minimum of record. All others are near the lowest amount previously measured for this date. In most cases, previous lows were established in 1977.

Mountain precipitation was well below average in January. Almost no precipitation occurred in the first three weeks. One or two storms passed through the last week of January, dropping from 1 to 2 inches of moisture in most areas. Temperatures were well above average for the month.

The amount of water stored in the snowpack is generally 40 to 50 percent of average with only a few areas near 60 percent.

The St. Mary's River headwaters in Glacier National Park have a little better snow cover than the Missouri River drainage.

Soils under the snowpack have average or above average moisture. However, soils in lower elevations are drying.

All snow courses in the drainage will be measured near the first of March. At that time, the extent and severity of the snowpack deficiencies will be evaluated.



Yellowstone River Drainage

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD		THIS YEAR		PAST RECORD	
	FORECAST	PERCENT OF AVERAGE	THOUSAND ACRE FEET	CASTLES	FORECAST	THOUSAND ACRE FEET	LAST YEAR	PERCENT OF AVERAGE
PERIOD								
April - September								
April - July								
YELLOWSTONE RIVER at Corwin Springs.....	1,450	69	1,626	2,102	1,200	69	1,326	1,749
YELLOWSTONE RIVER near Livingston.....	1,575	64		2,471	1,295	63		2,048
BOULDER RIVER at Big Timber.....	245	59		416	230	60		382
STILLWATER near Absarokee (1).....	418	63		660	346	62		555
CLARKS FORK RIVER near Belfry.....	430	67		644	390	69		564
ROCK CREEK near Red Lodge.....	83.0	70	131	118	63.0	69	104	91.4
INFLOW COONEY RESERVOIR near Boyd (2).....	28.0	43		64.5	21.0	40		52.5
YELLOWSTONE RIVER at Billings.....	2,889	62	3,969	4,682	2,450	62	3,377	3,979
BIGHORN RIVER near St. Xavier (3).....	1,357	67	1,611	2,034	1,250	67	1,457	1,861
LITTLE BIGHORN RIVER near Hardin.....	148	76		196	130	75		174
YELLOWSTONE RIVER at Miles City (4).....	4,437	62		7,142	3,850	62		6,243
YELLOWSTONE RIVER near Sidney (5).....	4,810	62		7,806	4,200	62		6,805

- 1 Adjusted for storage in Mystic Lake
- 2 Adjusted for storage in Cooney Reservoir
- 3 Adjusted for storage in Bull Lake, Pilot Butte & Bighorn Reservoirs
- 4 Adjusted for storage in Bull Lake, Pilot Butte, Bighorn & Tongue River Reservoirs
- 5 Adjusted for reservoirs in 4 and diversions into the Lower Yellowstone Canal

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE



STREAMFLOW FORECASTS

Streamflow forecasts have been lowered from last month because of low snowfall during January.

Presently most streams are forecast to have spring and summer runoff in the 60 to 70 percent of average range.

Over the past 50 years, only five or six years have had less runoff than is forecast this year. On most streams these occurred in the early 1940's, early 1960's and in 1977.

Unless there is a drastic change in weather patterns over the next two months, moderate to severe water shortages are expected to develop by late June. Those who depend on streamflow for their operations should begin thinking of ways to minimize the impacts of short water supply.

STREAM AREA	Water Supply Outlook	
	Spring Season	late Season
Yellowstone at Livingston.....	Fair	Poor
Shields.....	Fair	Poor
Boulder.....	Fair	Poor
Sweetgrass - Blg		
Timber.....	Fair	Poor
Stillwater.....	Fair	Poor
Rock Creek.....	Fair	Poor
Clark's Fork.....	Fair	Poor

